PANEL 1 – SECURITY I

Moderator: Joe Cox, President
Chamber of Shipping of America

I want to thank the ICMTS and those who put this program together for asking me to be a part of the program. The Chamber of Shipping of America is a trade association, although I don't like to use the word "trade" because we don't do a lot of the things that a normal trade association does. CSA's principal activity is lobbying efforts on behalf of American companies who own, operate and charter ships, which can be either U.S. flag or foreign flag. The majority of our members, in fact, operate both U.S. flag and foreign flag ships.

As I talk to CSA members and others involved in this industry, they ask "How are you doing?" If you're involved in the maritime community in these times, you have to smile at that question because how we're doing is that we're trying to deal with issues of security on top of all the other issues that the maritime community has to address during its normal work processes.

I know of no other area where the U.S. is exposed to the foreign community to the extent that it is on the foreign flag vessels coming into our ports with import cargo and arriving in port to pick up export cargo. We simply have to get this right. There is no alternative. We're not dealing with profitability issues of companies. We're not dealing with market shares. We're dealing with the lives of our citizens and ourselves. From very early on, ladies and gentlemen, governments have been instituted to protect the rights of citizens, and certainly the preeminent responsibility of our government is to protect our life and liberty, and that is what we are about.

When the Commandant spoke this morning, it was about something I think is critical – he called it maritime domain awareness. I like that phraseology because I think that tells us it involves the entire maritime community. I don't know the precise makeup of the audience today, but I could be easily speaking to freight forwarders or to shipbrokers or to a classification society or to Mike Watson's American Pilots Association. Whoever it is, if they touch upon this industry in any way, they are the ones called upon to be aware. Aware means that if there is an aberration in the process which causes you to question, to say "I wonder what happened there" or "I wonder why that is", we no longer have the luxury of moving on down the road and letting someone else worry about it. Awareness means that YOU must take some type of action. YOU must initiate some type of notification process. There must be some communication of your unrest to someone in a position who can carry the thought processes further and do something about it.

We, at the Chamber of Shipping of America, are one of the founding members of the International Chamber of Shipping. The International Chamber of Shipping is currently developing guidelines to instruct vessels on what steps to take at various threat levels. We are working with the Coast Guard to ensure, as far as possible, that the guidance we will eventually give to the entire maritime community will, in fact, reflect the needs of the United States of America. I can say that in the maritime security arena, the needs of the United States of America are coincident with the needs of any other maritime nation which, in the developing world, could easily be a target just as we consider ourselves.

The Commandant also mentioned closed ports and open ports. I do not consider those to be incompatible – I call it free trade. I believe that we have to have more control over our ports. At the same time, free trade must take place. Free trade is the aspect that allows some type of commercial development with trading partners in the world, wherein we bring their cargo in and we export our cargoes to them.

There was a recent item in the *Washington Post* editorial section, talking about the World Trade Organization and all the problems they have. The author was pointing out the fact that in the developing countries, who have taken advantage of the free trade allowances that have developed over these past decades, are the ones that are growing in the 40% range relative to when they initiated their trading practices. The developing countries that chose to not participate in that, in fact, are the ones who are having negative growth. If we look at free trade and the growth of gross national product as a key factor in terms of bringing poverty up, then certainly free trade has to occur. As we have free trade, we are going to have more trade. As we have more trade, more is going to have to come through our ports. We have to control that somehow, in some way, shape or form. But, we have to control an increasing piece of that trade. We must be able to handle that increase.

Right now, we have 400 ships call each day into United States. I don't know the flag breakdown on that, but certainly the vast majority of those are foreign flag ships. There are a number of containerships – this is an interesting number on which I did my homework – there are about 18 million TEUs moving into and out of the United States. This is not containers, but 20-foot equivalent units. About half of that – let's say 9 million – are actual 40-foot containers moving in and out. About 5.5 million 40-foot containers would have to be inspected per year, and that is about 16,000 containers per day. We have to be able to handle not just that, but an increase and I'm sure we are going to hear something about that.

Tankers – we use 18 million barrels of oil every day. That is 756 million gallons of oil used in some shape or form in this nation. That is going to increase. A little bit less than one-half of that is domestic production. A good portion of the remaining is imported from short-term crude hauls from Mexico and Venezuela. Long-haul crude from Northern Europe, West Africa, and the Arabian Gulf make up the remainder of about 2-3 million barrels per day. There is an uncountable number, because I don't think anybody has ever bothered to count them, but a small number of breakbulk ships and bulk ships that trade in and out of the United States. The aspect about this is that while we are focusing on containers and tankers and LNG carriers, we cannot discount the fact that the small rusty-looking vessel that has been in our port 18 times, on the 19th trip may be coming in with something in one of its hatches that we do not want coming in.

We have an extremely qualified panel able to address a number of issues in the security arena. The panel consists of Ed Badolato of CMS, Inc., and also the National Cargo Security Council; Commander Steve Flynn of the Coast Guard, and also the Council on Foreign Relations; and Kim Petersen of Sea Secure, a maritime security consulting company.

Our first speaker, Ed Badolato, has been involved in transportation and energy security for over 30 years. During that career, he has developed an organized, complex cargo shipping programs, orchestrated security and efficient delivery of all types of cargo, and has investigated serious

cargo losses. He served as Deputy Assistant Secretary for Security Affairs at the Department of Energy for both President Reagan and Bush, and in that capacity, he served as the Secretary's key troubleshooter for security and energy emergency planning. He is the principal architect and developer of the government's present-day nuclear weapons security programs, as well as its conventional energy emergency preparedness activities. He was Chairman of the National Cargo Security Council in the mid- to late-90's and he received their Lifetime Achievement Award. He was Chairman of the FAA's Air Cargo Security Working Group which was formed to investigate the TWA-800 crash. He is a career Marine Corps infantry officer. He commanded combat units from platoon to regimental size. He has been a military and Naval attaché in Lebanon, Damascus, and Cyprus. He heads an international security consulting firm, CMS, Inc., with offices in Washington and Johannesburg and Jakarta. He is a member of the Georgetown University Adjunct Faculty.

Our second speaker is Commander Steve Flynn from the U.S. Coast Guard Academy. Steve is currently a Senior Fellow with the National Security Studies Program at the Council on Foreign Relations, headquartered in New York City. He is also a Commander in the Coast Guard and Associate Professor of International Relations, and a member of the Permanent Commission of the Teaching Staff at the U.S. Coast Guard Academy. Currently at the Council, Dr. Flynn is directing a national study group on protecting the homeland – rethinking the role of border controls. He has been identified by *Washington Magazine* as one of the eight experts on modern warfare that President Bush turned to for advice on how to fight this war against terrorism. He has served in the White House as a director for global issues in the National Security Council staff during the Clinton administration. Over the past year, he has served as a consultant on the homeland security issue to the U.S. Commission on National Security (the Hart/Rudman Commission), referred to by the Commandant earlier today. He is a 1982 graduate of the Coast Guard Academy and received his Ph.D. in international politics from the Fletcher School of Law at Tufts University. Commander Flynn has lectured around the United States and abroad on homeland security and border control. He has had afloat assignments including two tours as Commanding Officer of Coast Guard cutters.

Our final speaker will be Kim Petersen, CEO of Sea Secure, a leading national maritime security consulting company. He is also the Executive Director of the Maritime Security Council. His clients include seaports, cruise lines, and other types of shipping companies. He has over 20 years of experience in intelligence and domestic and international security and anti-terrorism activities, and he is a specialist in maritime and cruise line security. He is a former Captain in the Army Special Forces, and his civilian career has included senior staff positions with former U.S. Secretaries of State Henry Kissinger and Alexander Hague. He was Chief of Security Operations for the Office of President-Elect George Bush during the 1988-89 transition. He has also served as a senior staff member in both the U.S. Senate and U.S. Defense Department in the areas of national security and intelligence.

Edward V. Badolato, CMS, Inc.
and National Cargo Security Council

Good morning ladies and gentlemen. It is a real pleasure to be here today. We always look forward to talking with a group, especially a group that has such a high content of people from the ports, from the maritime industries, and particularly from the Coast Guard. I have a warm spot in my heart for the Coast Guard. My grandfather was a member of the Revenue Service, Chief Petty Officer back in World War I and beyond until he retired, and he used to kid me a lot when I went into the Marine Corps.

This morning, we are going to talk to you about a couple of things that I think are important. We're going to talk to you about the maritime security overall, port security in particular. Also, we will discuss with you some of the background of what we think is going on in this area of terrorism. I also happen to be the Chairman of the International Association of Counter-Terrorism and Security Professionals, and we spend a lot of time thinking about terrorism and so forth. Through the last few years, it hasn't been a high priority in the port areas, but right now, we are going to talk about that situation, a little bit about overall security as we have seen it being focused on and developed in the port areas. We will talk about what is going on right now and a little bit about what needs to be done, particularly from a technology sense.

We all know that ports are not only America's economic engine, but also its most vulnerable gateways around the country. Right now, we have heavy regulation in the airports. A lot has to be done there. But, when we look at the overall situation of ports, there is a tremendous amount of activity to be done there. As we have see the Senate Commerce Committee, a lot of comments have been made – very adverse – about the security situation in the ports. One senator called this an embarrassment and a danger to national defense. We all know probably less than one percent of the containers are inspected and that the "average" Coast Guard inspection of a port used to occur about once every two years. I'm sure that is going to be fixed pretty darn quick. The cruise ships are especially vulnerable right now.

Right now, we have no uniform federal standards on security for ports and some of the people in the industry think that's good. It reminds me of the saying in the FAA, and I've done a lot of work and chaired a lot of committees over there – there is a little bit of home-grown wisdom there that says, "…if industry agrees with the FAA that something is bad, then it is probably good for the airports..." I don't think that relationship exists today between the regulatory agencies and the ports, but there is a tremendous amount of friction between industry and the regulatory bodies in other areas of the government.

I don't think anybody has a problem understanding that U.S. ports are porous. The laxity of security at American seaports has been an open secret among criminals heavily involved in security and things of that nature. We have known there are a lot of problems there. As a matter of fact, we also know from a terrorism point of view -- Osama Bin Laden, according to debriefings and court testimony from some of his folks, that we are now getting a much better idea of how he operates. He has his own fleet or ships, secret ownership, not operating here. They are mainly little freighters that operate between Somalia and Yemen and other places around the Middle East and up into the Arabian Sea. But, I think it is interesting to this group that there is a master terrorist, America's public enemy number one, who does have a fleet, who does look at maritime transfers and things of that nature, and it is something we need to think about.

Port crime is something we have been involved with for a long time. While there are various aspects of port crime, over the last year, with the Port Security Commission and especially after September 11, terrorism has risen to the top of the list. It must be remembered that there are a lot of other criminal activities go on – drugs, theft, money laundering, diversions, smuggling, aliens, and so forth – particularly on the import side.

There has been a big increase in thinking about ports and the threats to ports. The general erosion of international controls, the new breed of the international terrorist that we are having to face now through Al Qaeda , who have cells in over 16 countries, and as part of the national strategy to deal with this problem, President Bush and his national security advisors are going to go after those cells. There is also a new breed of international terrorist who doesn't care about losing his own life when embarking on a suicide mission, i.e., one that involves a very high-risk target – hazmat, LNG, explosive ships -- very high risk, high consequence targets. We have to really think about an individual who is willing to stand there on a deck and take those hits and die for Allah or some other cause.

We have a lot of international cells already in the country that are doing surveillance, setting up safe houses, controlling sleepers, and things of that nature. We don't know whether they are, in fact, going after ports, but we cannot afford to take that chance.

Given what we know and what is going on, there are probably 1,000 Al Qaeda people undercover in the country right now. It is the biggest undercover threat to the security of the United States that we have faced since World War II and unless we acknowledge that and go after it, we are going to be in for big trouble. We also have a lot of low-risk, high pay-off targets which if attacked have the potential to cause tremendous economic destabilization as the attack on the World Trade Towers did. There may have been as much as a quarter to a half-percent of GNP loss from that event.

With regard to the federal role in port security, there are three big players: the Coast Guard protects and controls the waterways (they are doing a tremendous job now – overworked, under-manned, but doing a great job); the Customs Service spot checks incoming cargo; and INS reviews cruise ships and other people trying to get into the country on vessels.

There are various port security arrangements. We have private companies providing the front-line defense as they have done in the port areas in the past. Terminals operators determine the number, qualifications, and pay of the security guards they hire. Operators are required by federal law to file security plans with the local U.S. Coast Guard; however, that needs to be upgraded and I'm sure that is being taken care of now because federal code does not set a minimum standard for security plans or security regulations.

Recently, I was in Florida addressing a large trade industry group – the Defense Manufacturers Association. They are concerned because there are no federal regulations saying whether it should be a 6-foot, 8-foot or 10-foot fence. FAA has regulations around the airports, but when you look around various infrastructure facilities, there are no standard security regulations in that regard. Additionally, the adequacy of plans is left to the judgment of the local Coast Guard

Captain of the Port who weighs them against the perceived threats to the port. If you have a very good, well-staffed, well-trained individual in charge of the port, as we hope we do and as generally we do, this takes care of itself.

I want to talk for a moment about physical security of the ports. Good port security doesn't just happen. Port security is a culmination of well-trained, well-disciplined personnel, the right equipment, and good management. We'll talk about the physical security and the things that many people are aware of – fencing, lighting, entrances, locks, etc., on the type of things that your security managers worry about and that which senior management wasn't too concerned about in the past.

Airports, some ports, and a lot of energy facilities are right now looking at their fences at various power plants, LNG plants, and things of that nature that they haven't looked at for 5-20 years. They want to assess the situation at their gates, fences, inner-areas, portals, CCTVs and things of that nature. The situation is not being looked at just by the security managers right now; it is being looked at by corporate management from the CEO and Chairman level on down.

The improvements generally fall into three main areas: mobile units such as container security and things of this nature; absolute facilities that we talked about a moment ago; and then the systems and services that we use – the logistics management, document controls, the fleet management, and so on.

In 1999, we had a Presidential Commission on seaport security. They did an excellent job' however, there were very few industry people involved in it. As a matter of fact, I don't think many were involved except to comment informally afterwards. Those involved were primarily USDOT and other federal agencies, led by Coast Guard and others. They looked at 12 seaports around the country and I think we all understand and remember that it found numerous inadequacies – unfenced cargo yards, poorly trained security guards, insufficient standards for workers with access to sensitive areas. In other words, we had a lot of people who either lacked clearances or were the type of individuals we wouldn't want working in an area where we were concerned about security. Some had criminal records and other problems, some came from other countries and were not citizens and/or came from countries that were on the State Department's terrorist list, and things of that nature.

Let me talk for a moment about transportation security issues. I would like to place transportation security issues as a template over what we talk about as port security issues. Some are traditional and have been around for a long time. What we have to do and are faced with is how to develop effective container tracking and reporting systems. We need to come up with a watch list for containers so that we can use technology to help us get through and wade through these millions of containers that come in and do what we did after TWA800 went down off of Long Island. We set up the known shipper program for air cargo, where we could take a large portion of the shipments and just put them aside and say, "We're not going to worry about this because we know these individuals have a proven track record." We know they are inspecting their own. We know there is effective security there. We will focus on the smaller block of "unknown shippers", making the process much more manageable than bottlenecking the port and the port throughput.

We have to strengthen laws in prosecution, an area where we have worked long and hard through the years with the Senate and the Congress. We had some laws about interstate transportation that haven't really changed since the days of buggies. We really need to not only take a look at what is going on in the area of security and the alleged security bill that will pass this year – port security – but we need to look at the laws and regulations. Some of them are very, very old; for example, some of them were written before containers were introduced.

Additionally, we have to improve the understanding and nature of port operations. We have to build task forces. One thing I have learned through the years in all the security work that we have done, there is no substitute for having a government/industry security task force in the port area. This is absolutely imperative and to me, government has to take the lead in making this acceptable and very, very effective to industry so that it can work very well. It is being done in many ports. Of the 300+ ports, I don't think it is going on at every port, but it should be

We also have to increase local law enforcement expertise and understanding about what is going on so the surrounding communities can be made aware, for example, when there is something or somebody in one of the terrorist cells with diagrams of the port that checked into a hotel. If they have information about what goes on in the port – what do they know? How are they going to play in this game and who are they calling and contacting? In the larger ports, we have very good internal/external communications, but that needs to be improved for all ports. We have to do more effective security R&D technology.

There are four key areas: coordinating the indication and warning systems; a watch list for containers, which can be done relatively easily through tracking systems; container locks and seals; rapid non-intrusive detection for nuclear, bio-chem and explosives, which will require a lot more money at the government level; and lastly, integration of security and intelligence systems.

What lies ahead? It is very clear that terrorists are going to increase their transportation infrastructure activities. They are thinking about this, looking at it overseas. It will probably come to the United States. Law enforcement is going to be hard-pressed to disrupt covert cells and operations, and overhauling and auditing of port security systems is going to be an important, growing area in which there will be a lot of work for a number of years – internal and external.

I'm going to close by saying that this is a subject and an area that really needs to be addressed. It has a high technology solution overtone and if this group can't do it, I have to be honest with you, I don't know who can.

Thank you very much.

CDR Stephen Flynn, U.S. Coast Guard Academy
and Council on Foreign Relations

It is a real pleasure to be here today and talk about what Ed has just pointedly characterized as a "vital issue". This is obviously a critical audience to address it to. I share, right away, his concluding remark about the importance of technology in getting us out of the mess we're in.

I would like to take a little bit of time to provide comments about the mess we are in, and then I would like to give more of a framework that perhaps pushes the envelope a bit in terms of how we think about where we go from here.

I've been doing a good bit of this post-September 11 and I try to give my basic facts of life speech in various venues here. I would say these are the critical facts that we need to keep in mind, post-September 11.

First, for the foreseeable future, regardless of how the war goes over in Afghanistan, there will be anti-American terrorists with global reach. We have to accept this as simply the world we are in, a fact of life that we are going to have to be struggling with for a matter of years – not something that is going to be resolved as a result of a campaign that is currently underway and we wish obviously great success.

Secondly, those terrorists will have access to means, including chemical and biological weapons, formerly something you could only muster if you were a government of some stature. They will possess those means to carry out a catastrophic attack on U.S. soil.

Thirdly, and I think most soberingly, they will have been inspired by what happened on September 11, inspired first by the relative ease by which the terrorists were able to perpetrate such a horrific act, but equally so, by the societal and economic disruption that came as a consequence of that attack, largely as a result as our rather ham-handed efforts to instill a sense of security where it really didn't exist much before, and all those consequences that flow from that.

This is a critical point. The game plan of terrorists, the ones I think we most have to worry about, is not just to kill people or engage in high-order vandalism. The game plan is to do that with the aim of creating societal and economic chaos in such a way that it weakens the power of the state that they are directing it at, so that they will revisit their policies or change their relationships. That is the goal. The means of doing it is catastrophic terrorism.

To the extent of which one of the consequences of September 11th is that we, ourselves by our own actions, created societal and economic chaos because we didn't have the means to restore credibility, we are part of the terrorism business. Getting on the right side of that business means reducing that opportunity to have a threat as well as the chance that they will succeed at carrying out an act, as well as reducing the disruption that flows if they, in fact, do that act.

Let me try to talk to this a little more specifically. What we did, of course, in the afternoon of September 11th, was not just simply ground our air fleet. But, we effectively closed our seaports and sealed our borders with Canada and Mexico. On its face, we have a hijacking of four domestic airliners and yet we took those acts. I think they were perfectly prudent acts. We had

virtually no intelligence as to what was going on, and the best thing to do in those crisis is to freeze the situation and try to assess where you are and hope you can make a big problem become less of a problem just by taking that first step. But, the real problem, it struck me, began right after that when obviously we wanted to start it all back up again. Essentially, the conversations went pretty much like this – the President said okay, I want to open up those seaports again and open up those sea borders, and I want good commerce flowing again and I want to restore a sense of normalcy. So, tell me how you are going to filter the bad from the good, the dangerous from the benign within your systems here so we can get this all humming again. What I likely suspect he got was a very pregnant pause from all the agencies who were involved with that, basically saying that gee, we didn't do that much before September 11th, why do you think we can do it now?

That is really the fact of life. One of the imperatives of globalization has been to leach all of the inefficiency out of the movements of peoples and goods in order to derive an enormous economic benefit which of the 1990's was certainly a boom time for. But, part of that was perceived friction that was in that system that slowed an inefficiency and the traditional roles of security and enforcement and regulation that were largely seen as, again, contributing to, at best, nuisances, and at worse, undermining competitiveness. To some extent, what we were involved with over the last decade was not simply benign neglect of those functions, but, I would argue, a little element of "malign neglect". Malign – in that we really didn't want that capability in place because it would cause problems and slow things down. It would undermine efficiency and competitiveness. The problem with that is that when the pendulum went the other way, of course, which is what happened on the afternoon of September 11th, was to throw out the whole system basically.

What we did on the afternoon of September 11th and the week following was to effectively do what no other nation could do to this great country – we effectively imposed a blockade on our own economy. We did that because there was no credible means to routinely detect and intercept dangerous things within the flows of peoples and goods that cross our borders. That is why we did that. I doubt there but a few of you today that think we are actually that much better along now than we were then.

One of the quips, in fact, that I've been making to some audiences is that by comparison to the other transportation modes, the aviation sector is the Fort Knox of security. It is that bad, as we all know. The last two years, I have been running around this country along the land border with Canada and Mexico, from British Columbia to Quebec and from San Diego to Brownsville, overseas to Rotterdam and Hong Kong and regional ports, asking this question: "In light of the cascading flows of peoples and goods, how are you folks -- Customs, Immigration and other regulatory enforcement counterparts – able to filter the bad from the good, and the benign from the dangerous?" The answer basically has been: "Well, we don't and we really can't within the existing border management system. The volumes are too great. The velocity and the pressure to move is too great. We just simply can't do it."

I think up until September 11th, we said, the risks associated with that situation don't outweigh the enormous benefits of a seamless transportation system. But, I would argue, and argue pre-September 11th, with the handful of people who were interested in this then, was this was a false

dichotomy. It was false to believe that putting controls in the system and providing some security in these systems would inherently bring about inefficiencies. It is also a false dichotomy to think that the only way controls can be done is by stopping to examine every person, body, cargo, conveyance, as the way and means in which you're going to get security. The fact that two can be mutually reinforcing, and I would argue in this time especially that the rise and political recognition of the value of security provides an opportunity to fix things that make things more efficient, but also make them more secure at the same time. That is the key – that these two things don't work at odds.

To some extent, when we set this up before as efficiency versus control, when we had no controls in the system and you have a breach of security, the sense is not that it is a breach, but an absence of security, then we basically turn the spigot off. If controls are done as they are traditionally done, trying to stop and examine everything as it arrives at a national jurisdiction, that is a formula for gridlock which also compromises security when you basically take the engine out of prosperity.

How do you get around this? It is pretty clear conceptually what we need to be doing. The devil is in the details of how we execute it. But, obviously from the United States' perspective, it is going away from an ad hoc system of border management at ports of entry and ports of arrival and toward point of origin controls. Basically what we are trying to control is not our borders, but an international transportation system for which there are inadequate filters that we can't feel are credible enough at our borders or over there, that we rely typically on border inspections to accomplish. I would suggest, however, that there are means to get it over there so we don't have to do it all here.

The ultimate objective should essentially be, beginning with point-of-origin, concentric layers of inspections that give us a credibility that legitimate is legitimate. I call this a former reverse profiling. Our objective is to validate legal identity and legal purposes as early in the system as possible, with sufficient confidence that we can facilitate that which is legitimate, while focusing limited energy and resources and time we have on that which we know very little about.

There is a huge haystack out there that is legitimate. How can you provide essentially enforcement authorities and regulatory authorities with confidence up-front that it is in fact, just that. You can't do it word of honor. We know that terrorists are very good at blending in with the real estate. That is what they did so well on September 11th. Therefore, it has to be a system that we feel very confident in. What that is, I think has three layers to it.

First, in point-of-origin controls, there is ultimately the private sector doing things that reduces the risk that they will be compromised by a terrorist or a criminal when they enter something into our transportation system. For example, let's take the container as a mode in this instance. When a container is stuffed, it has to be something that there is confidence this is a sanitary place where the container is loaded – sanitary because the company itself, with private/public arrangements, has a validation that is the way in which it runs its loading dock, the people have access and so forth – that there are known people packing what is advertised to be in that container. There is a digital camera that watches the loading process. The container is sealed with a real seal beyond the plastic tag-thing we have now, but a real mechanical seal.

At the second stage, as we move to what I call "in-transit visibility and accountability", as a container moves from that loading station, it has a GPS transponder and a light sensor or temperature gauge so if somebody opened it up, it would set off an alarm. Then, as it moves through the system, there is electronic tagging and so forth so the chain of custody issue is well maintained. Maintaining in-transit visibility and accountability is a second tier beyond the point of origin.

The third tier is that the owners and operators of that system fess up as to who they are and what they're bringing in at the start of the process, as close as possible to the jurisdiction to which they are heading in their final destination. That way, you can manage risk. You can actually assess them as – oh yeah, you're the good guy who moves goods at this way at this price at this time and using this conveyance, which we vetted before and in whom we have confidence. You get essentially this easy trade line with a minimal amount of inspection. Or, it can be determined that we don't know anything about you at all so you are going to stay in this queue until we get a chance to get around to inspecting it. That is the model I think we need to be moving toward and I think you all here have the more scientific technical background to put the pieces in place to make that happen.

Let me re-emphasize why I think it is so critical at this time that we do this, thinking through point-of-origin and how we get from there from a political perspective. I was in the Port of Newark just this past week and, of course, the extraordinary thing when you're in Newark, the intermodal moment – sitting in the container terminal and looking out the window and seeing the rail, the Jersey Turnpike and the international airport, all within a certain distance of each other. Let's imagine right now that a container has been used as a potential means, to bring in a weapon and cause a destructive event somewhere in our country. Even with the conventional capability, it goes off somewhere. The question is then asked, with a lot of scrutiny directed at us here, gee – I guess containers can be used as bombs. How are you going to discover that in Newark? Well, we are going to try to open them up and check them out. Well, if you open up and it has a trigger and it blows up, where is the plume going to go? It is going to go across the rail tracks. It is going to go into the Jersey Turnpike and it is going to go to one of our international aviation terminals. Ooh, that's bad. I guess we shouldn't let any containers come into Newark anymore. If that is the only place we can do an inspection to validate, that is the dilemma we're in right now because of the concentration of our transportation infrastructure.

That makes a key point as well. We would be foolish to look at port security, maritime security, isolated from a transport network. It is all one big system. What our problem has been is that these communities have been too segmented – so crazy that you pool National Guard that we are using to help inspect cargo coming across the land border, with those in airports, where they were assigned to roam around and provide security right after September 11th. Is there no link here between containers and traffic and terrorists and drugs and so forth here? People we have just roaming around with guns in the airports? We're not thinking about this as a system, which is what it really is. We have to look at those linkages across the system. The container course, we know by definition, is in the modal. It forces us to think about those links across the board.

So, let me finish with this – and that is just to say that I think what we also need, what is also required is private/public engagement, and make it such that it becomes THE system, and that happily most things still move by sea, primarily, and most of those move through just a handful of ports at some stage in their life. There are a handful of mega ports and there are just a few regional ports for which transshipment is basically used. The idea here is that we can think about essentially embedding security in a weighted approach across that system by reaching consensus amongst the port authorities and amongst the governments and say, this is the deal – if you want to come through this port, this is how you're going to behave. You are going to have to do these basic things to feel that you are legitimate. You're going to be involved in this kind of information sharing. In that way, that is the ticket to get through our system. You can't basically do business in this world unless you go through this handful of ports at one stage or another here, so there is enormous leverage there. It is not even anti-Islamic to do it. It is the right thing to do for a whole host of regulatory reasons.

We also need to think of then pushing our inspectors outside of our own jurisdiction and into those places. Why does a Customs agent have to be in the Port of Newark? We are going to have some there, but why not also have them in Singapore, Hong Kong, Vancouver, Halifax. Get your inspectors out there to be part of the pre-clearance, part of the intelligence exchange, to raise that competence level again that legitimate is legitimate so we can facilitate it.

In short, we need to be thinking about point-of-origin as our focus. We need to think about how to accomplish this in-transit visibility and accountability and we need to be thinking about how to fuse this information across the various stakeholders who have it, both private and public, and amongst the many public players. We need to do that in a truly multinational kind of way, in one that is across the transport network. If not, we are just going to push the problem somewhere else. We are just going to have more gates guards and so forth and push the stuff out of the gate, or move it to another part of the transport system and as a nation we are not going to be any more secure.

I thank you for your attention this morning.

Kim Petersen, Maritime Security Council

For those of you who don't know, the Maritime Security Council was started in 1988 and we represent about 68% of the world's gross tonnage at sea. We're partners with a number of government agencies, both here and overseas, including MARAD, DOT, U.S. Coast Guard, State Department, CIA and others. Our mission is really to represent the security interests of the international merchant marine community against criminal and terrorist threats. Events of late have demonstrated that it is incumbent upon not only the shipping communities, but also the ports to review, analyze and implement improvements in their physical personnel and information security programs, particularly now as the range of threats have expanded far beyond whatever we thought even 10 years ago.

The amalgam of threats now has been really more akin to what you might have seen in a Rambo movie. We have weapons of mass destructive, chemical and biological agents, very sophisticated human smuggling schemes, and high-tech approaches to narcotics smuggling such as the riveting or welding of blisters containing narcotics onto the hulls of ships by divers using closed breathing apparatus that don't have bubbles. Equal resolve to these incidents and these risks has to be shown by both the ports and the ships.

The shipping community has done a great deal in the past several years, pre-dating 11 September, to protect the vessels and their passengers and cargo, employing state-of-the-art access control systems, as well as electronic and physical detection devices for finding narcotics, explosives, etc., and even development of CO-2 detectors that can ferret out people who have secreted themselves into containers onboard their ships.

The same resolve has not been shown by ports, and with some exceptions, such as the State of Florida, the Interagency Commission on Crime and Security in the United States was correct when they pointed out that seaport security was, in fact, one of the most vulnerable issues facing our nation's infrastructure.

Stephen Flynn pointed out something that we also discussed in the previous session with Admiral Loy and that is an intrinsic weakness of the mandate of the President's Commission on Seaport Security, which was focusing entire on U.S. port security. As we pointed out then, homeland defense cannot start within our own ports. By that time, we have already seen the problem enter into an area approximate to our airports, to our intermodal systems, and what we need to do is concentrate on those ports of origin that, in fact, pose the greatest risk. Whether it is weapons of mass destruction, stowaways or drugs, the fundamental fact is that the sources for these threats are outside the United States. So long as our emphasis is on interdiction and not prevention, we are going to remain vulnerable.

To that end, in 1999, the MSC initiated a partnership with some key agencies to try to quantify the scope of the problem associated with a lack of internationally recognized standards of security for all international ports – that is, those ports that have merchant traffic with ports of origin or destination outside of our national boundaries. Second, to develop a recommended tiered strategy, pegging cargo, passenger, throughput, GNP and other factors that would codify such standards, as has previously been done with airports.

There is a discussion going on now to see whether or not we may be able to conduct vulnerability assessments at foreign ports, and establish a scheme by which we may be able to establish the relative risk of items coming from those ports such that Customs officials and others might be able to apply greater scrutiny to those ports that do not employ the standards that might be developed through a partnership with U.S. Coast Guard and the IMO, as an example.

The problem really though is far more basic than that. In my work, I've audited about 165 ports in over 100 countries, although that number changes almost every time I give a speech. In places such as the Congo, for example – I was in Point Nyowa, and they had recently installed fences around their facility. In fact, it was a very good fence and an expensive undertaking on their behalf. But, the fence stood only two meters high with a three-strand barbed wire topping. It

would not be very difficult to scale and certainly didn't meet any of the standards that we use here in the United States. When I asked the Port Director why they didn't make it higher, he said because nobody told us to. If you had told me, I would have built it to whatever standard you had asked. But, we haven't been given any advice from anyone – the IMO, the United States, or whomever. So, the will exists in many areas to improve standards, but we as a country have done very little to educate those ports that provide us with so many goods and services, given the wherewithal to protect themselves to a standard that even comes close to even our worst ports here in the United States.

Let me just give you a quick background on what type of security you can see right now in ports and in vessels here in the U.S. A lot of this talk is unsettling with regard to the risks that we live under. I'm reminded of a speech to some students where the speaker said "we find ourselves at a cross-roads. In one direction, we see disaster and annihilation. In the other direction, we see devastation and destruction. I can only pray that we choose the right path." It is really not quite so bad. In fact, the cruise industry, as an example, has been looking at the potential risk from terrorism for many years. I created the Security Department at Princess Cruises back in 1995 and even at that time, we initiated discussions with government agencies within the Department of Defense and elsewhere to look at our vulnerability to terrorism and what the response plan would be – whether that incident might occur in the United States or overseas. That preparedness, naturally, does not receive a lot of attention and for good reason: (1) We don't want to broadcast our preparedness to our adversaries; but (2) from a commercial standpoint, people are going on cruises for the express purpose of enjoying themselves and relaxing. If you talk too much about how prepared you are to have folks in black masks and submachine guns propel onto your decks and hose down terrorists, it can distract you from the casinos and the other end-of-midnight buffet. However, it is probably appropriate now to talk about this because it is, in fact, important that the public know that we haven't waited until 11 September to look at these issues. In fact, they are fairly mature.

Achilles Lauro, of course, was a seminal event and the City of Piraeius and the *Santa Maria* incidents point out the vulnerability that cruise ships can, in fact, become party to terrorist incidents. But, a lot has been done to harden vessels against that type of attack. All the major cruise lines now have very well-trained security departments on board the ships. On your typical cruise ship, you will probably find a security officer who will likely be a three-stripe, out of the British Navy. He will have retired after 17 years and is quite happy to be working on a cruise ship for 12 months out of the year. He has, under his charge, anywhere from four to eight security watchmen or guards. A program that I helped develop has many of these guards now being fulfilled by Gurkas out of Nepal. These are mercenaries, in effect. They have been working as military within the British Army for almost 170 years. They are extraordinarily loyal, wonderful people. We have now created a maritime program to provide employment opportunities for them as the U.K. starts to diminish the role of the Gurkas within their own armed forces. These are people who have military and security training, coupled with the security officer who is, in most cases, been the Master-at-Arms on a naval vessel, which is effectively a director of security for a warship. They have available to them an array of very sophisticated devices – everything from walk-through and handheld metal detectors, to electronic devices ranging from CCTV to devices that will, in fact, detect microscopic traces of explosive residue on suitcases and what have you.

This is coupled with the fact that the security departments are also looking at the security of the ports that they visit, conducting vulnerability assessments, which are not required by any national legislation or regulatory requirement. They do this because they can't afford to have an incident. They work together. It is not a Gimbles and Macy's when it comes to security because everybody recognizes that if an event occurs on a Carnival ship, people aren't going to say – "Well, they are vulnerable to terrorism – I'll go on a Princess ship". The fact is that people will simply stay home and go to DisneyLand.

The equipment and the personnel are there and there is intelligence sharing too. There are ad hoc committees that actually see the directors of security for the cruise lines visiting Washington on a regular basis where there is an exchange of information. The reason for that is quite clear. The expertise for maritime security really rests with industry, and this is something that is very important to keep in mind. Whether it is the ports or the ships, the people that know most about security actually are in the private sector. The government understands that and that is why the partnerships now exist.

With respect to ports, there has been a long-standing commitment to see effective security within our ports. This hasn't always been the case, but here in the past 10 years we certainly can see that there has been a maturing of the protective schemes that we find in ports. In states such as Florida, there is now the development of a model port system that pre-dates 11 September. Through the efforts of the Florida Ports Council, you now have a program that is seeing vulnerability assessments conducted not only by the state law enforcement entity called the Florida Department of Law Enforcement, but also by the ports themselves. They are conducting security management studies to assess exactly how well they protect themselves against an array of threats. They are conducting background investigations on all the workers that either are employed at the ports or part of a vendor or contractor force that goes there. This is going to be initiated on 1 January. ID and badging will be in place in all of Florida's ports – photographic ID's for anybody who works there for any significant period of time. In 2002, that is going to be networked such that all of the ports can share information on the access of any employee or any vendor or any truck driver or anyone else who is entered other ports. That information is available too from the Florida Department of Law Enforcement in order to do crimes analysis and to determine exactly what is going on in the ports. This is unprecedented and it is being done not under the pain of regulation, but being done because it is the right way to do business.

Security personnel in the Florida ports right now, you will note, include everything from police departments and sheriffs, to National Guardsmen and private security as well. The state is moving to create a certified maritime security officer program such that the private sector can provide people that will have had skills equal to or exceeding those of the law enforcement officers that are there right now. This is a rather extraordinary development, and in concert with the Maritime Security Council, the Maritime Security Institute, and the Federal Law Enforcement Training Center. This is something we will likely see migrating into other states.

Then there is also intelligence sharing. The ports will be sharing intelligence on a regular basis with one another and with government agencies. This is important to see that there is bilateral communications between both the ports and those agencies responsible for law enforcement.

In conclusion, let me just reiterate the point that Admiral Loy made this morning, in remarks that were right on. The ports and our maritime industry are the most valuable components of our natural infrastructure, but they are also the most vulnerable. We need to see federal leadership not only in the execution of our security plans, but also in financing what is not only going to be a capital-intensive period here in the next few months, but also recurring costs to secure the ports with personnel, software and hardware upgrades in the years to come. Also, let's not forget that if we secure things unchecked – if we proceed without caution, we may well find ourselves with the most secure ports of all, and that will be ports that will be shut down because we simply can't operate because of the onerous conditions that might be placed upon them.

Thank you all very much.

Summary of Q&A

Q: I really appreciated hearing the views of the panelists, particularly the concept of moving the checkpoints to the origin ports. I completely agree with that. Speaking about freight particularly, I heard all of the panelists talk about improving port security. I understand the infrastructure security requirements that are needed; however, my question to the panel is, clearly in the case of containerized freight for example, the port has very little to do with actually loading and securing the containers, doing the seal checks and so forth. Clearly, in my mind, that solution pushed back to the ports of origin gets to the consolidators that stuff the containers, the actual shippers and their stuffing, and independent loading and securing processes, the checks and balances with those trusted or untrusted commercial shippers, and then the carriers themselves. The real control of that cargo in containers is a very commercial issue. The ports act, in many cases, no more than as a real estate agent buying and selling and leasing property to the large carriers, who are really controlling how the containers are stuffed and secured and sealed and delivered and loaded and unloaded from those ports. I would be interested in the panel's sense of that issue. In reality, it is clearly how that security breach could be violated.

Flynn: I absolutely agree with what you said – the terminal operators have very little control. What they have is a chain of custody. They know typically where the box is within the facility, but they have no idea what is in the box. When you talk to the carriers, they will say the same thing – they know exactly where it is in the ship, they just have no idea what is in the box. If you talk to the truck drivers, they say the same thing – they know the box is on the back of the truck, but they have no idea what is in the box. We have a problem – we need to know what is in the box. That is going to happen with the consolidators and it has to happen with the manufacturers when the box is stuffed. We've clearly got to have some adult supervision of that process or standards in that process. I think some agreement is needed regarding sanitized facilities – that is, whether it is owned by a private sector person or even support by a trade association. This is where it will be done and is the kind of the arrangement we simply have to be thinking about. I know this is nightmarish for some of the mom & pop shops out there, but it is just the way it has to go. We are placing this whole system in jeopardy because we don't know what is in the box.

The ports have some leverage in this, though they can't do it independently and therein lies the whole problem. Within much of this industry, everybody knows what the problem is, but nobody thinks they have the leverage to change the situation. Ultimately it does take some government leadership, but it has to be done at a higher level. Again, I think potentially the ports have the leverage since they may well be the place where, if there is a bomb in the box, it would go off and cause huge disruptions and threaten public safety. They have the right to decide what comes in and the standards by which it comes in, just like ports do with regard to ships. The IMO can be very useful in this and also simply the mega port committees – folks coming together and saying they will not feel comfortable with a container coming into a terminal unless the following requirements are met. That has to be harmonized and we have to do it sooner versus later. The first time this is used in that way, the whole system is going to get shut down and we are going to get all kinds of lunacy on Capitol Hill as a response.

Badolato: When we look at seaports in the United States, the majority of crime that takes place, doesn't take place inside the port. For various types of crime, the majority takes place in about a 1.0 to 1.5 mile radius of the port. This means we are looking at parasites and other types of criminal elements, as well as terrorists, who are operating in a seaport area inside the United States, while the ports themselves are fairly clean. Nonetheless, the crime takes place outside and we have to think about it as a system and we also have to reinforce some of the comments that have been made in working with local law enforcement and others.

Petersen – Perhaps what we need to do is create something analogous to the super-carrier initiative where you have vessels that agree in advance to take certain protocol measures in order to safeguard themselves against the potential of having narcotics brought onboard their ships. In response to that, the government will consider reducing fines associated with drugs that are found onboard their ships. It is a very stringent requirement, but it is also a very successful program.

The second idea is that in addition to something like the super-carrier initiative, there needs to be an increased inspection program and that means more Customs officials at the port. Right now, we have about 10% of what is required. Secondly, we need to see more and more inspections using gamma ray systems like VATCUS and what have you, and we are woefully short of those in the critical areas where we see a lot of containers move.

Q: We have heard from Admiral Loy and others about the great reliance on future information systems to attempt to pre-check everything that is going on. We have also heard that most of this information we need is from overseas before it is shipped. Is anything being done to try and open up this flow of information from overseas. In the past, it has mainly been "…here is a form, fill it out and send it to me." I don't think that is going to work in the future. There will need to be some way to get to this information instantly and to get the foreign operations to open up their flow of information into any kind of security systems. I wondered if anything had been going on in that area.

Badolato: With that whole process in mind and what goes on with air cargo is particularly moving toward this, there are problems in identifying any hazardous explosives or any other illegal-type material that comes onboard. However, we also understand we are only talking

about 5% or even less of what you bring in. That is an area that really needs to be focused on and there are, in this town, at least a dozen committees that are looking at various aspects of it, but the seaport, particularly the transportation activities that this group is involved in, is only thrown in as an afterthought and, in my estimation, there is no focus. I think the Coast Guard, Customs and others can be champions in this area. We need to get into and use the modern tools we have, particularly in knowledge management, data mining and other types of activities where they are almost commercial, off-the-shelf-type systems and software to be used to help us do this. If we are going to be serious about understanding the situation, we need to use the capability that's out there to have the profile of a bad shipper's container pop up. At airports, we will need a better capability to do the same with a passenger. The problems now being discussed regarding weapons of mass destruction in containers is similar. We are going to have to put the money and effort into developing the system for which we have existing, underlying programs to do this, but somebody has to manage it. I think it is very important and it fits in with what Steve Flynn has been saying here about finding out what is going overseas and how to get this going. We have to solve this container problem so it doesn't harm the flow and economic throughput by identifying the bad guys out there.

Flynn – Right now, the good news, to some extent, is there is a means to do that. The bad news is that it is largely in private hands and not in public hands. It's almost as if there are two sets of books. You can't run an effective supply chain management system without virtual real-time tracking of what moving in great detail. Many of you have probably ordered something over the internet and it tells you it has left the factory floor, it is on the train, it is on your porch. You have web pages that tell you the truck is in Cincinnati now and is going to arrive at 3:07. That is the kind of capability that industry is designing to support the just-in-time delivery system.

Then there is the piece of paper they give the government regulators. The piece of paper, often illegibly written, with as little information as possible, given as late as possible. This is the cat and mouse game that has been going on a long time. The problem is that you cannot do a nominally detection risk management on no data or post data. Many of these regulatory systems were built around the notion of "we'll maintain the books and if you ever have a problem, you can come check it out." Well, that is fine for regulatory compliance, but is not fine for security up-front, being able to assess whether a company or a shipment is legitimate. Even real-time data just when you arrive is too late. It has to have time to process, so it has to go out ahead of time. I think you have the world's customs organizations out there that can help advance this venue. The facilitation to engender has been big with the International Chamber of Commerce. There are players out there who want to get this right. The key is embedding the security dimension into what they come up with – not just facilitation, which is "get the heck out of the way – we're coming through."

Q: To what extent are liaisons being developed, or do liaisons exist right now, with DoD as well as a number of the intelligence agencies in terms of getting that kind of information either from a foreign point-of-origin or as well as from a homeland security standpoint?

Petersen: This whole process is being looked at right now. I don't think there is anything in place, but a number of very senior individuals in Coast Guard and in transportation are looking at this very hard. There are systems and capabilities to be able to get this done. There are some

people who I have talked to who are knowledgeable about the challenge of what has to go on here. You want intelligence. You want data. You want the various types of information to meet this threat. There are a lot of bright guys out there working on this; however, we are a long way from getting to where we should be.

Comment from Questioner: I would be interested in feedback from all of the attendees and the panel on a perception I have had since September 11. I think one of the other things that September 11th really changed is thinking of the Department of Transportation and, of course, the entire transportation infrastructure, as an extension of our nation's defense; whereas in the past, it was solely perceived as and focused on simply a transportation network for goods or people. I think one of the big changes we all need to be thinking about is extending that concept of the Defense Department to include our transportation system.

Q: Where is the connective piece between DOT and DOD?

USCG Response: In response to the question about whether or not there is any intelligence connectivity – yes, there is. In fact, the Coast Guard has an organization called the Intelligence Coordination Center, which is co-located with the Office of Naval Intelligence in Suitland, Maryland. Admiral Loy alluded to a cooperative program that we have been working with the Office of Naval Intelligence and through them, the rest of the intelligence community, keeping track of not only vessels but other items of interest of the ships coming in our direction. We can do better and we're collecting a lot more information than we can even process sufficiently these days. But, we are moving forward at rapid pace in this whole arena. In short, there is a lot of connectivity with DOD. Whether or not we should be under the DOD umbrella, that will be decided above my pay grade. That is something Admiral Saunders should have done when he was still on active duty.

Also, to address the cargo issue, we have a very close working relationship with the United States Customs Service and the Immigration and Naturalization Service, and we are sharing information with regard to both personnel and cargo. Yes, Customs needs to ramp up and they know it -- their APIS and ACE systems to do those things better along with us. On the international front, as Admiral Loy also alluded to, we have a major effort underway at IMO starting this week and continuing next week, and then on into the near future. One of the elements of that is going to be trying to get a grip on not "point of origin" – we have to keep it under the IMO umbrella and call it "port-of-origin" -- information for cargoes coming in our direction so we can get the international community engaged. That is where the international maritime community meets.

Q: The concept seems inescapably sound in that you try to move the point of control as far away from the physical border as possible. However, the question I have for the panel is how do you do that? Obviously, it involves buy-in from other people. We are the ones who seem to have the bullseye painted on us right now, but presumably that isn't always the case. Do you envision this as something we can do by fiat through domestic legislation as a condition of entry here, or do you contemplate that this is something that has to be done through more complicated and perhaps time-consuming procedures of getting international agreement on standards that would also apply to shipments that originate here?

USCG Response: I would say you are going to have to work on parallel tracks across the board on these things. You are going to have to work on the international, pushing harmonization and knowing that is going to be a longer-term process. There are some things you're going to have to do to get your own house in order, and there are real opportunities. I think this is probably a key place to put near-term emphasis on prototyping systems to improve concepts in getting people engaged and demonstrating that this is a model of how to proceed. On its face, we have three things we have to do safeguard a transportation system: (1) we need to validate the operators or the passengers, their legal identity; (2) we have to validate the conveyance, whatever that may be; and (3) we have to validate the cargo. Right now, we have those pieces of data flung all over the place, and the timing in which it may have to be produced is there. But, it is that simple in principle. We need to validate the people, the cargo and the conveyance.

One of the things I have been working on in the last year and one-half to move in this direction is in Jamaica where you have a real problem with to put it politely "contamination", with a lot of drugs coming through there. However, Jamaica is a major regional transshipment hub. They are in a position to scan every single container that goes through that port. The real estate to do it and the time urgency isn't there. They can keep that data and share that data. They are also willing to share their own international maritime early warning data about who is coming in and out of their ports. Their vested interest in doing that is to not be identified potentially as a problem child as they are now, which has discouraged their transshipment customers, after putting a quarter billion dollars in maritime infrastructure. Jamaica is becoming known as a trusted partner. They have their own issues, as every society does, of collecting Customs duties and stopping small arms and so forth. This is but one example of other jurisdictions, besides just bullying them up here, which have a vested interest in fixing these problems. They are equally vulnerable. The key is coordination.

Canada is obviously another opportunity. I was just in Toronto last week and those folks up there worry about a hardened border -- $410 billion a year of trade coming across a handful of border crossings; 75% of the trade comes across four bridges. If you harden that border, you cause some problems – say they close down the system for a week – what that means. You don't have to bludgeon them in – it is not a UN kind of deal here. You can meet with these folks and say, here is the alternative. We have to turn off the spigot, or option B is that we find a way to get a handle on this.

Time is of the essence. If we don't have something on the table, we can't fix this right away, but we can get it on the table. Woe to us when the second event happens using this system, and then you leave it to all the imaginations of the loonies out there to come up with how to fix it. It is likely to be hardened. You have to have something out there you can point to where we are making progress. It looks like we've been asleep at the wheel again for another 3-6 months post-September 11 because this entity thought it was too hard and complicated – then woe to the industry.

Q: Almost all of the discussion has revolved around the unknown container and the possible dangerous consequences. I have a question about another piece of it – the maritime equivalent of what happened at the World Trade Center and the Pentagon, using in that case a plane as a

weapon and in the port's case, using a ship, a LNG tanker, or something else as a weapon. Does the panel think that is an easier problem to solve – whether it is taking over a LNG tanker or some other smaller ship that could then compromise an LNG tanker or some other type of vessel – is that a simpler problem to solve in your estimation?

Badolato: We have a lot of things happening with LNG tankers. We have a great example up in Boston. I happen to be doing some vulnerability assessments on a number of LNG facilities around the country, and I can tell you there is tremendous concern in applications there. I would think that the increase in security, the overall concern on these maritime ship movements that have the potential to be a mega event, is being focused on and looked at very hard. The industry is doing things itself already in the security area. There are more simple things that have to be looked at which have much more volume involved; i.e., doing something in the Houston Ship Channel, either with chem/hazmat, and even a major oil spill. The fire and explosion toward the hundreds and hundreds of tankers that hit the United States everyday in the major port areas. This is something people are stopping to think about.

We have a very good safety record. We have considerable concern about safety and that same level of professionalism in the maritime industry for safety in these oil and other hazmat and petroleum-type of conveyances has to be translated again into security. My experience is that is happening now.

Comment – I would just add to that, happily for this purpose, it is maritime so it is contained – the container got us further upstream. Most of the people who are in this industry have been well vetted. You don't just get on these ships and drive them to kingdom come. From the safety start, training standards and so forth, but a company does not buy a multimillion dollar vessel and just send them on their way with whoever shows up at the pier. The vetting systems are there. The ability of risk management to set some aside. There are ships who take on pilots doing the same thing with the same crew day in and day out, and stopping every single one, escorting every one. I don't think that a terrorist who is taking over a ship and going to use it as a missile would stop to get a pilot – they probably wouldn't do that. Therefore, if we are thinking point-of-origin for LNG, you send the pilot and crew down to Trinidad and they ride the ship up. If that is what you need to get confidence here, that is what you do. Point-of-origin has to apply even in this concept. It is too late if it is at the buoy for a ship as a missile.

Comment: As you may know, the Navy has fallen in behind the Coast Guard in supporting the maritime domain situation awareness and there has been activity at the Naval War College, Naval Warfare Development Center. They have been gaming the different scenarios we talked about here. One of the things that has evolved is a prototype C-2 command and control computer, data mining effort that is done by MIT and MITRE, and there was a small demonstration up in Newport recently. It is a very powerful tool for the Captain of the Port. The COTP is the front-line commander in this whole situation in the ports. He really needs a command and control tool to allow him to see what ships are coming in 96 hours out and this is a first step in developing a prototype tool that would allow the COTP to assess the situation. It is on the order of what you spoke about looking at different databases, and trying to integrate them into a common operational picture

Cox: I have a few closing comments. This was an excellent panel. My thought process as I was sitting here was we aren't where we have to be, but you have to start somewhere and we were woken up on September 11 and now we have started. Thoughts are going to have to be translated into action, and action frequently translates into resources and allocation of funds for resources. I think that is where we can support Coast Guard and our other government agencies that are seeking some support from Congress to do what they have to do in order to accomplish what they have to accomplish on our behalf.

Rex Edwards, Moderator for Capacity Session
Introduction of the Challenge Speaker

The challenge speech on capacity will be presented John Vickerman. John is a Founding Principal and member of the Board of Directors of TransSystems Corporation, a consulting firm specializing in planning and design of important intermodal facilities. He concentrates on helping ports and shipping companies with operational planning and design issues. John has worked for 65 of the 90 U.S. deep-water general cargo ports, ranging from Alaska to Southern California to Maine to Florida. So, he covers the whole U.S. He has also worked for the Ports of Hong Kong and Rotterdam, an intermodal project for the Chunnel. He has been active in national planning efforts in the maritime community. He has recently been the chairperson for TRB's Intermodal Freight Terminal Design and Operations Committee, and has been on a number of other committees. He currently serves as an advisory board member for the Global Maritime and Transportation School at the U.S. Merchant Marine Academy. He is a licensed civil engineer and registered architect with a Masters in structural engineering. He also serves as a Captain in the Civil Engineer Corps of the U.S. Naval Reserve.

CHALLENGE SPEAKER
John Vickerman, Principal
TransSystems Corporation

"MTS Capacity Problems: Real or Perceived?"

My job is an easy one this afternoon – to pose some questions and hopefully all the wisdom and answers will then flow from the esteemed panelists in their views. The topic is "MTS Capacity Problems: Real or Perceived"? Do we really have a problem or not?

My first question is can the U.S. marine terminals really accommodate – I know they are anticipating it – but can they accommodate the future freight flows? What is the magnitude of those flows and is there a pragmatic way they can be handled in an efficient way?

The World Bank tells us that the productive work product output will increase 33% in the next 10 years, running to about $40 trillion. This is certainly a long-term view and doesn't take into

account some of the early or short-term dynamics. But, clearly it is an indicator of the richness and vitality of the world global trades.

If we look at the Asian ports, which are fueling most of the trans-Pacific growth, we see some phenomenal increases just between now and the year 2005, for the North American Pacific Coast, due only to Asian imports. We are looking at somewhere between 35% and 42% increases in trade.

Let's consider the forecasted demand for the Panama Canal and forecasted transits to the year 2040. If we really look at where we are today and we look at all the variety of vessels moving and transiting the Panama, we see that their growth is somewhere between twofold and fourfold; however, none of those lines decline. In fact, the vessel transits through the Panama are all increasing over time, particularly container vessels. It was the fourth most frequently transited vessel in 1980 and in the year 2040, it will be king.

If we look at the containerized world trade, it has been growing at about 8.5% compounded annually and has not decreased since the inception of the container, and is in fact under the long-term scenarios, will continue at about this rate. By the way, the U.S. growth rate for containers is about 6%, or two-thirds of the global world market growth rate.

If we look at the U.S., we see for nearly every trading and port competitive range, that the growth is between 6-7% compound annually, and what this means is that by the year 2020, every U.S. container port gateway, provided they want to maintain market share, will either double or triple in volume. I've always said that I don't believe it is possible to double or triple the number of berths or terminals to meet this demand. Therefore, at least in my estimation, we're going to have some hard times in terms of accommodating this growth.

An illustration of this using the worst case scenario, assuming that the Asian flu continues, and is steady state, the growth in the combined ports of Los Angeles and Long Beach looks like a quadrupling of trade to the year 2020. Half of it is an intermodal/rail split phenomena. The capacity of the current port is roughly as you see it, which means we have a twofold increase. By some estimates, using the Port of Long Beach as an example, at around the year 2006, the port may be hard-pressed to develop any further marine terminals to suit this demand. This is the lowest, most conservative, worst-case, Asian flu continues, dynamic. I would show you the other one, but it wouldn't fit on the screen.

What are the implications for that? At the current productivity per acre, there is about 3,600 new acres required. I happen to be the project manager on the 2020 plan when 2,500 acres, which is currently under construction now, was conceived of in 1987. This means these port terminals will have to be outside the breakwaters, or somewhere else. A lot of land – a lot of terminals just to meet the conservative dynamic. If we go to the other coasts and we look at New York and New Jersey, specifically at the forecasted demand for containers based on vessel channel dynamics – that being 50-foot channels. The current capacity of the combined ports of New York and New Jersey, including the New York institutions, if we look at a 2040 horizon, we are going to see a fourfold increase. It really doesn't matter whether we have 50-foot channels, 45-

foot channels, or we don't do anything about the Kill Van Kull – we leave it the way it is – the growth is up.

This phenomenon on projections is also applicable to the military. If we look at the Army's strategic mobility issues, their desire is to reduce deployment times by about 80% and do it on top of, or in concert with, commercial ports without disruption. If we look at our last war, we had a benevolent opponent who said why don't you just take 180 days and get your logistics together. If we look at the current dynamic, 5 1/3 heavy divisions, about two LMSR's per heavy division, the target goal right now is about 75 days and the Army Chief of Staff believes that has to be done in 30 days. There are some proponents of this that indicate it needs to be below the 30 mark. If we couple just the general merchandise container traffic illustrated earlier, plus all the neobulk, breakbulk, liquid bulk, and a variety of others, and on top of that, put a military movement on top of our preauthorized load-out ports, we have a substantial task in front of us.

Can the U.S. ports handle the continuing growth of vessels? Here again, I'll use the container vessel as an illustration and the shore-side demands that new vessel configuration will have on our ports. If we look just last year at the major alliances, the five major alliances shown in white, and we look at all of the vessel ordering, and this was to about June last year when we were still in fairly positive economic times, before the recent turn-down occurred, you can see at the bottom here that about 147 vessels with a capacity of nearly 700,000 TEUs were put into place or ordered. This is a 28% increase among all of the global alliances worldwide. This is a significant ship order placement.

Although some of those carriers have withdrawn the orders because of the economic as well as the recent events in September, it is still a daunting task. Despite very low financial returns, the liner industry continues to build bigger vessels. If we look at China Shipping's order of 9,800 20-foot equivalent units exceeding the largest vessel afloat by 2,000 TEUs in the year 2004 delivery, gives us an indication of the wave to come, although it may be mitigated or moderated because of the recent events.

We look at shipyards and what they are currently planning for. They are looking at about a 9,000 TEU jumbo vessel, propelled by a 93,000 hp engine, the largest low-speed diesel engine ever created in the world, and has drafts of approximately 48 feet. This 48 feet, plus two feet of under-keel clearance and two feet of vertical ship movement (something we affectionately refer to as squat) would mean that we need more than 50-foot channels in most of our strategic ports – a phenomenon that does not exist today.

Back in the 1970's, a very important guide to planning ports said you shouldn't anticipate a vessel being larger than 3,200 TEUs. The reality today is 6,000 – 8,000 TEUs, and the long-term possibilities is 10,000 – 15,000 TEUs, and we are approaching the 10,000 TEU threshold as we speak.

Is there a larger vessel out there? Several companies, including a German shipyard, have indicated this vessel is possible. It has a beam of 226 feet. If I plot the Miraflores Lock in the Panama Canal, the maximum through the lock – 13 containers wide. This vessel has 28. This is a significant issue. You might note the draft has gone down a bit – a very famous naval architect

by the name of Archimedes, indicated that the displacement draft for a vessel is only a function of displaced water, and as you get wider and longer, we actually have a depression on the draft requirements.

If you take a 10,000-foot vessel, you balance imports and exports, and you use a 75% intermodal split, which many of the modern West Coast terminals are doing today, you end up getting about 13.5 – 10,000-foot long unit trains in and out every vessel call. It generates about 6,000 units and 26 trains two miles long for every vessel call. If we look at their requirements on the apron and we look at the congestion on the gate, the picture of the newest marine terminal in Los Angeles (APL's Pier 300), we see there is a peaking characteristic on the wharf, as well as at the gate, and with the megaships and the offload and the evolution of ships, it causes us quite a bit of concern. Can we accommodate this requirement with the current capacities in the port?

Let's talk a little bit about the cruise sector. Lauren Kotas is on the panel, and in her own right, an expert in the cruise market. The question there is will the changing vessel requirements in the cruise industry change U.S. port facilities? We certainly know that the terrorism issues have changed the dynamics, and in fact, have certainly reduced dramatically the patronage of cruise in the Mediterranean with a streaking-out of that region toward U.S. domestic markets for cruise potential.

Let's take a look then at some of the venues here. One of the largest vessels afloat, nearly 5,000 aboard this particular vessel, uses Azipod propulsion, electric pulser drives, and is a very large vessel. In fact, it is the traditional hallmark of hubbing for cruise activities. If we look at a recent project that the Port Everglades complex has looked at, it is looking at investing $500 million in its recently completed strategic plan to accommodate on-ground passengers of 75,000 at peak flows. This is the concept for a simultaneous loaded discharge of nine Eagle class vessels at peak cruise day, assuming that the cruise lines will not adjust or will not accommodate variants or widening of their vessel deployment schedules away from the weekend. There is also an emerging mini-cruise market and expeditionary market with smaller vessels, all exterior bunks or cabins and lowers, and is a popular emerging new trend.

What is the U.S. productivity and our capability? If we look at the late 90's and we look at our ports and measure it in 20-foot equivalent units per acre per year, we see that the West Coast ports, primarily because of intermodal load-outs, are substantially higher than the East Coast. The average is about 2,100 TEUs, Europeans being about 3,000 TEUs and the Asian ports at about 9,000 TEUs. That is average. There have been some major developments in that regard and using Jim Brennan's recent analysis on high transshipment ports, that is mother-ship to feeder or barge, if we look at that dynamic, we see the U.S. ports non-transshipments to other ports, or at least transshipment is not a specific major issue. If we look at the world ports with transshipment, we see there is actually an increase of 400% in the throughput capacity capability of the very best terminals we have in the United States compared to transshipment focused, intelligent transport operations using transshipment modes. Perhaps what was intermodal yesterday might be termed transshipment tomorrow.

Landside access demands continue to increase. Using the latest FHWA freight framework analysis and looking at the 2020 truck flows using incremental increases above today's volumes,

we have significant flows, particularly trucks from NAFTA – both Canada and Mexico. We have the unique capability now to run it by value, by port of entry, and we can even look at narrowing choke points within the system using this database.

If we look at rail traffic, we see a substantial increase potential there of about 48%, associated with tonnage on the railroads. We know the railroads have historically been moving east/west on the double-stack container network. In the last couple of years, we have had some emerging north/south corridors that will drive trade deeper into our heartland. The NS/CSX split, CN/IC's $3.0 billion merger, and in fact, CN/IC's recent acquisition of WC of about $1.5 billion, for a total investment over the last five years of $5.0 billion, is a substantial artery connection to our major ports of entry. All we can judge from that is it is going to get really congested out there, not only at our ports, but around and the hinterland and the landside access that is associated with it.

Are there prospects or are there things that could mitigate this? Are there issues that can help us solve this? Clearly, some of the research that our panelists will talk to us about today will tell us that perhaps there are some technologies out there. I happen to be one that believes in information technology as a major empowering element for shortfalls in port capacity. The real question that most shippers have is where the heck is my cargo. I really don't care how it gets there – train, truck, ship – just get it to the consumption zone intact, good quality, just-in-time, with value and perception of quality service as needed. The rest of the logistics is really unimportant other than that last activity.

If we look at the railroads and the maritime interests and the trucking interests, they have developed over the last couple of years multi-carrier, neutral information tracking platforms that allows us to see freight data, with high fidelity, through legacy systems from origin to destination. They offer, in fact, secure internet capability in that transaction, and we are now seeing at least the beginnings of a nucleus of private sector offering the ability to control and move cargo. We all know in the container industry that the most frequently moved commodity in a container is air. We believe then that better resource management through information might help the capacity issues in our ports.

The Port Authority of New York/New Jersey's freight information real-time system for transport (FIRST), which America Systems, Inc. has put together, is one of those real-time, web-enabled information platforms that will allow for a variety of capabilities directly to not only the shipper, but the carrier and the various elements using through legacy system information transmission. We do know from that if we can have consistent, accurate, real-time CONUS data from both the ship and the train, that for the first time in our country we will be able to effectively use that information to increase capacity at the node, at the port. We believe there are major terminal benefits in that regard.

In another session, you will see some technology that relates to agile port IT technologies that take this a step further, and in fact, has looked at increasing terminal capacity by nearly 200% without building anything through the better use of information, reducing terminal congestion, fewer equipment needs, and reduced acreage as well as reduction in port access. The concept of

taking empties to a remote inland site has also been experimented with and will be a tool to help our ports be more productive.

Lastly, let's look at the inland side of the equation. In my view at least, there is an emerging viable feeder service, both coastwise as well as inland intermodal barge services. There are many members in the audience who are actively involved in current coastwise trade and transport. There is, in fact, a growing belief that the mother ship to feeder vessel or barge, and the return of the mother ship back for reloading, will in fact improve the economies of the mainline carriers if, in fact, there is hub-and-spoke coastwise inland intermodal service issues. But, the demise of container-on-barge particularly has always been the long transit distances, the inability to provide consistent scheduling and frequency when needed to meet just-in-time requirements. Those constraints are coming away from the system and, in fact, we see an emerging viable opportunity here. One illustration actually has a pre-committed doublestacked train that would allow feeder services and cross-river services for multimodal capability.

With that, I will just tell you that it is, in fact in my opinion, that what we have here is a real dilemma and if we are not careful about how we judiciously commit to improvements in our port and marine facilities, we will, in fact, deleteriously affect the trading capability and the logistics behind our entire infrastructure.

Thank you very much.